Cities Thinking/Offering Muni-broadband networks:

California
- ➢ Anaheim
  - Wi-Fi broadband
  - private-public partnerships
  - The city is currently engaged in developing wireless network for public safety purposes such as Police and Fire Departments. The mayor of the city, Mr. Pringle, has shown interest in extending the technology to the residents of Anaheim. However, the details about this issue are not published. Mr. Pringle made it clear that he does not intend to indulge in any controversial situation like Philadelphia and is not interested in competing with private enterprise for these services.

- ➢ Fullerton
  - Wi-Fi mesh
  - The city signed a contract with CDCE Mobile Computing to install the network which costs approximately $55,000 to deploy.
  - The Wi-Fi network covers the area of 6.5 miles. Downtown Fullerton is being redeveled and has many restaurants and businesses that attract casual visitors and customers. The network will also provide a platform for city staff to experiment with wireless applications such as those that support public safety and public works. If successful, the network will be expanded to other areas of Fullerton. The first phase of the network launches this month (January 2005).
  - The city's Redevelopment Agency is providing funding for the network and will underwrite its operating cost for at least the first year. As a result the network will be available to the public free of charge for the first 12 months. After that time it is hoped that downtown businesses will support it and continue to make it a free service.

- ➢ Cerritos
  - mesh wireless network
  - Aiirmesh Communications will run the network.
  - Aiirnet reached an agreement with the City of Cerritos to use city owned facilities to provide the service.
  - Cerritos has 50,000 people and like many cities in the US, uneven DSL and cable access. Some parts of the city have it but others don't. Aiirnet's broadband Internet service will be marketed to residents and businesses in Cerritos as an alternative to dial-up Internet, with the added advantage of being thoroughly wireless and available in all outdoor areas throughout the city. According to Aiirnet, pricing for the service will be comparable to wireline broadband access alternatives with a variety of service plans.
  - Aiirlink will market the service to Cerritos residents via a number of local marketing partners. The City of Cerritos itself will become one of Aiirnet's largest customers, using the service to provide wireless broadband access to city workers and available for a variety of public safety initiatives.

- ➢ Hermosa Beach
  - Wi-Fi
  - Hermosa Beach has a running network which saves the city a lot of money and generates revenue. Moreover, it has brought his community together
  - city-owned wireless network
  - Wifihermosabeach is buying bandwidth wholesale from a local ISP

- ➢ San Francisco
  - Wi-Fi
  - SFlan provides the service
  - One of my favorite shopping areas, Union Square in San Francisco, will become a Wi-Fi hotzone offering free Internet access.

- ➢ West Hollywood
  - Wi-Fi
  - The City of West Hollywood has posted a request for proposal seeking a vendor who can deliver citywide Wi-Fi service.
  - West Hollywood is looking for a vendor who can deliver free Wi-Fi access. The city is still investigating whether one can place wireless equipment on light poles (which are owned by Southern California Edison). Equipment from the former Metricom/Ricochet, which went bankrupt, is still on some light poles and the city does not know yet whether it can use these locations for the new wireless equipment.

- ➢ Culver City
  - Wi-Fi
  - The city is using mesh equipment from Firetide.
  - Culver City is one of the many municipalities in California that are setting up municipal wireless broadband networks.

- ➢ Encinitas
  - Wi-Fi networks
  - Cheetah Wireless Technologies will operate the network
  - Downtown Encinitas has 250 businesses, 150 offices and 1,500 residents. The city is exploring ways to expand the service, including providing Wi-Fi access to the transit agency that serves the region, and using Encinitas as a central point to expand Wi-Fi up and down Highway 101 to San Diego in the south and Los Angeles in the north.

- ➢ San Mateo
  - Wi-Fi
  - Tropos Networks provide the services
  - 17 Wi-Fi cells which are arranged in a mesh configuration with only two backhaul connections at strategic locations to the city's fiber ring. With the Tropos Wi-Fi cells, the SMPD was able to create a reliable, large scale Wi-Fi network that would have otherwise been economically and logistically unfeasible to do.

FLORIDA
- ➢ St. Cloud
  - Wi-Fi
  - The city has contracted with HP and Marketing Resources Incorporated.
  - In addition to providing free public high-speed Internet access to every citizen in St. Cloud, the Cyber Spot will provide all city departments, including Police and Fire, with enhanced capabilities in the field. St. Cloud, a suburb of Orlando, has a population of 25,000, expects to grow to 25 square miles (67 square kilometers) and 74,000 citizens by 2012.

- ➢ Dunedin
  - Proposing wireless broadband network
  - The ISP will sell wireless access and share revenue with the city.

- ➢ North Miami Beach
  - Wi-Fi
  - Tropos Networks
  - The police department chose a Wi-Fi network because the legacy mobile data system they have been using for years, is being discontinued by its provider. In their search for a replacement, they discovered that available cellular-based systems require expensive recurring charges, and their performance pales in comparison to the broadband speeds offered by a metro-scale Wi-Fi system.

New York
- ➢ Brooklyn
  - Broadband
  - The Report also points out that there is hardly any competition in the market for broadband services in NY. One of the biggest obstacles to expanding broadband access is connecting individual computers and/or local area networks (LANs) to high-speed fiber optic network backbones owned by Verizon, Time Warner, etc. that connect their users to the Internet. Verizon in particular dominates the scene.

  - The lack of broadband access and the high prices charged by the incumbent operators are issues that are not going away. As more cities realize that broadband access is as much a necessity for businesses today as is electricity, they will begin to address the lack of competition in broadband services which is responsible for high prices, spotty coverage, pathetic bandwidth and poor customer service. It's clear to many people in a lot of places that leaving it up to the "marketplace" (in many communities, the "market" is a duopoly or a monopoly) just does not work anymore.

Nevada

- ➢ Las Vegas
  - Mesh Networks
  - commissioned by the city's Traffic Engineering Department for a mesh network that covers approximately 5 square miles
  - The city may later decide to enter into a deal with Cheetah for a public access network, but there are no plans for that yet.
  - Private-public partnership.
  - The city could give a company like Cheetah Technologies the right to put up equipment on light poles. Cheetah would run the network for Las Vegas and charge a monthly fee. In the IEEE Spectrum Online article, Cheetah suggested a price of $20 to $40 per month for fixed wireless access; $60 - $80 per month for roaming access. I think these amounts are still on the high side. To succeed as a wireless broadband provider, I believe you need to give people a replacement for wired DSL and cable. A price of $15 to $25 per month depending on bandwidth would be far more attractive to customers. Bandwidth should also be in the range of 1 Mbps to 3 Mbps. I do not see a lot of ISPs offering bandwidth in this range except in Europe and Asia. The city makes some money from the network by sharing revenues with the service provider, with portion set aside for the municipality's own use of the network. In any event, municipalities save a lot of money by using the wireless network for a variety of municipal applications for utility and field service workers, social workers, police and fire department personnel.

Georgia

- ➢ Atlanta
  - wireless network (Atlanta Fast*Pass*)
  - Biltmore Communications, will be building out the network
  - Syniverse is Biltmore's transaction settlement and clearing partner for ISPs, telcos and carriers whose users roam on the Fast*Pass* network.

- ➢ Adel
  - Southlink.us.
  - The city chose Tri-State Broadband, a wireless systems integrator and provider of fixed wireless Internet access solutions for city & county governments, and municipal utilities
  - Adel's success in launching this service is interesting for many municipalities, not just small towns ignored by cable and DSL providers. Many large cities in Europe, such as Amsterdam, have fiber optic rings - much of which is unused - and recently, these cities have been discussing plans on bring VERY high speed access to homes and businesses. The catch has always been the expense of digging up the streets to bring this "fiber to the home", the last mile problem. One viable and affordable solution would be to use wireless technologies to get around the "digging" expense.

Ohio
➢ Daytona
- Wi-Fi network
- The city is working with Harborlink, a local company, to set up the hotzone
- Aside from providing public access, the city wants to use the network for municipal applications: electronic completion and processing of work orders, Wi-Fi mobile phone calls, automated meter reading (AMR), automated vehicle location (AVL), and mug-shot and fingerprint transmission capabilities for the police department. Many cities are already using their municipal networks for these applications and claim that they are saving a lot of money.

➢ Cleveland
- wireless Internet
- OneCleveland project
- These organizations are using, or have plans to use, the network in a variety of ways:
- Education
  - Health care
  - Government services
  - Public safety
  - Research

Washington
➢ Seattle
- WiMAX
- Speakeasy already delivers broadband connectivity in Seattle so it is an addition to their existing service.
➢ Spokane
- Wi-Fi Network
- The network has two domains: (1) the city's private domain which it will use for public safety, mobile workforce, and automated parking enforcement and (2) the public domain, SpokaneHotzone, which is devoted to public access offered through OneEighty Networks, a local ISP.
- Users get the first two hours of access per day for free. By the fourth quarter of 2004, OneEighty hopes to make additional hours available through the purchase of a day pass or a monthly subscription service.

➢ Benton County
- Wi-Fi
- Maverick Wireless

➢ Franklin
- Wi-Fi
- The Franklin Public Utility District (PUD) in Washington State has deployed a wireless broadband network using its extensive fiber optic network as a backbone, according to Al Bonnyman of Community Broadband Networks.
- The PUD will offer wholesale capacity to third party ISPs which will provide service to end users. Apparently, Washington State prohibits PUDs from selling service direct to end users.

New Mexico
- ➢ Rio Rancho
  - Wi-Fi
  - They are using Azulstar Networks, a division of Ottawa Wireless, as the service provider.
  - Under the 25-year license agreement, the city will grant rights-of-way to Azulstar to install and operate Wi-Fi equipment that will provide a blanket of "cellular Wi-Fi" coverage across all 267 square kilometers (103 square miles) of the city. Azulstar Networks Founder Tyler van Houwelingen said the project will begin immediately and expects a swift deployment with Wi-Fi data and voice services beginning by year-end. The network is projected to be operational across the entire city prior to March 15, 2005, which is the original target date set last June. The network, which is being funded by private investors, will use hundreds of small Wi-Fi repeater radios attached to buildings, utility poles and city infrastructure.

Kentucky
- ➢ Lexington
  - Not a municipal project
  - Lexington Wi-Fi, a local WISP, will be delivering the service
  - If Lexington Wi-Fi meets its targets, it will expand the network to cover 207 square kilometers of Fayette County. The network cost $18,000 to deploy. Annual maintenance costs are approximately $14,000.

- ➢ Bowling Green
  - Wi-Fi
  - They are already talking to an organization to explore building a wireless cloud over downtown

Illinois
- ➢ Urbana
  - Champaign-Urbana Community Wireless Network
  - CUWiN's three-part mission is to:
    - connect more people to Internet and broadband services;
    - develop open-source hardware and software for use by wireless projects world-wide; and
    - build and support community-owned, not-for-profit broadband networks in cities and towns around the globe.
  - The Community Wireless Network is a program of the Urbana-Champaign Independent Media Center Foundation (IMC), a federally-recognized non-profit organization.
  - The project has supported itself through donations, foundational grants, and institutional support.

- ➢ Chicago
  - Wi-Fi
  - CivicNet project
  - The article points out that the project has encountered serious delays and a weak economy. Indeed, like many municipalities around the country, Chicago has not been immune to budget problems. As a result, city officials are now emphasizing the cost-savings that the project would bring, as opposed to the cutting-edge services that the city government and residents would enjoy. One of the main elements of the project is the implementation of wireless broadband networks.

Michigan
- ➢ Grand Haven
  - wireless broadband service
  - Grand Haven is not deploying its own wireless network
  - It has granted Ottawa Wireless a five-year non-exclusive license to install, operate and maintain the network on public utility poles and on the city's Board of Ligth & Power's stack on Harbor Island
  - Other details of the agreement:
    - the city gets five percent of Ottawa Wireless's revenues every three months;
    - the Board of Light & Power had earlier granted permission for Ottawa Wireless service to use its poles and the utility is negotiating for the right to buy the operation and take over the service;
    - basic service costs $19.99 a month for a 256 Kbps connection (on the slow side of DSL, but still better than dial-up and repeater antennas costs $149 (home use) and $199 (business use).

- ➢ Gladstone
  - Wi-Fi
  - Gladstone, Michigan (population: 5,000) has started providing wireless broadband access as a municipal service.
  - They use Charter Communications cable network and send out signals from a 32-meter (106-foot) tower over a 26 square kilometer (10 square mile) area. The city charges $39.95 a month for access.

Louisiana
- ➢ Lafayette
  - - Wi-fi
  - - Syndeo Communications Group

- ➢ Baton Rogue
  - - Wi-Fi
  - - Verge Wireless Networks, Inc. a division of Camsoft Data Systems
  - - Coverage is available by the Old State Capital, behind the Government building, and down 2 to 3 blocks of both North Boulevard and 3rd Street. Verge Wireless plans to complete the rollout of all antennas by year end giving the city a ½ square mile of free Internet access in the downtown business district. In the next few weeks Verge will release the downtown portal and advanced security features on the network to ensure that the free service is not abused. Free access will always be available, although users requiring secured access back to a corporate office as well as heavy bandwidth users will require a daily, weekly, or monthly paid account. Pricing has not yet been determined.

- ➢ New Orleans
  - - Wireless Surveillance network
  - - Tropos Networks
  - - The New Orleans network will operate in areas where video surveillance cameras are deployed. The idea is to bring wireless connectivity to video cameras in locations where there is no access to the city's wired network. It can also provide broadband wireless data connections for police officers, allowing them to view surveillance camera video while in the field.

South Carolina
- ➢ Charleston
  - - Wi-Fi
  - - The Charleston Chamber of Commerce is paying for the deployment
  - - Although it is unlikely that the availability of downtown Wi-Fi will lure tech businesses into the area, it will make life easier for people attending convention visitors, tourists and visiting business people. Like other cities that have deployed public access Wi-Fi, Charleston's move is a PR exercise although one which is popular among several downtown area businesses that have already signed up as participants.

Maryland
- ➢ Baltimore
  - - Wi-Fi
  - - "Baltimore UnWired" project
  - - Cost less than $10,000 to start and was donated to the city by the local wireless company Accelacom
  - - Nevertheless, wireless ISPs (that charge for access) are worried they will not survive if cities provide Wi-Fi for free. Actually it's not only cities that give it away for free.

Cafes, hotels and locations that offer Wi-Fi access to customers as an add-on service (at no extra charge) are very popular. Why pay by the hour or have a monthly subscription? Of course, it's not really "free". The location is paying someone for the service, but at least the user does not have to be burdened with additional hourly or monthly fees.

Arizona
- ➢ Tempe
  - Wi-Fi
  - The City and the contractor will negotiate a shared revenue model wherein the City will allocate a portion of its revenue for use of the network by municipal employees, and offer government and educational services to residents.

Wisconsin
- ➢ Madison
  - Wi-Fi
  - The city, county and state have issued an RFP seeking a vendor to provide the service. No tax dollars will be used; instead, the vendor will pay for the right to run the network and will be allowed to charge fees to end users. This sounds more like a franchise model.
  - In order to qualify a vendor must, among other things, be willing to establish roaming agreements with other vendors, so that users of a city network can seamlessly roam onto another city's network
  - Wisconsin is one of those states that recently enacted a law (Wisconsin Act 278 which entered into effect on July 1, 2004) placing restrictions on municipalities that wish to offer telecommunications services. The Act contains several exceptions, e.g. for municipalities that have no existing commercial broadband service and municipalities that will NOT deliver broadband directly to end users. So Madison can deploy a network and allow several providers to use it; it can also put out a tender seek one or more providers to deliver access.

- ➢ Milwaukee
  - Wi-Fi
  - The project is a joint venture involving the city, SBC Wisconsin, and Cisco Systems.
  - Additional assistance was provided by GreenWireless, Teleco Systems, and OnMilwaukee.com, and the Milwaukee School of Engineering.

Texas

- ➤ Garland
  - Wi-Fi
  - Texas has just deployed a wireless broadband network for public safety using equipment and software from NexGenCity

- ➤ Linden
  - Wireless Internet
  - Mesh Network
  - In addition to Linden, another Texas town, Gun Barrel City, is in the process of deploying a LocustWorld mesh network.
  - Local wireless ISP owner Wesley Allison is currently replacing his existing wireless infrastructure with the LocustWorld system. Frustrated with the difficulties encountered with having a point-to-multipoint system, Allison contacted FastLine and LocustWorld for assistance in deploying a mesh network in his area. Before he started to use the mesh, Allison found it difficult, if not impossible, to penetrate the dense tree cover common in the Deep South. But once Allison visited Kenny Bain, co-owner of FastLine Wireless Internet, he quickly decided to replace the access points he was using with LocustWorld hardware.

Oregon

- ➤ MEDFORD
  - WI-FI
  - The network uses MeshNetworks' broadband solution.
  - Viasys Services (a MeshNetworks VAR) did the systems integration, deployment and project management.
  - The Medford network closely follows last month's announcement by NexGen City of their 57 square mile (147 square kilometer) deployment in Garland, Texas. The Garland network is the largest mobile mesh network in the world. NexGen City is a licensee and OEM of MeshNetworks' technology.